HE BELIEVES IT TO BE NOW COMPLETE AND READY FOR GREAT USES.

Monitor has been Occupied for Porty Years-The Means by which a Steamless Engine May Pull a Train Across nahara. When Capt. John Ericsson towed the Admirally barge from Somerset House down the Thames, at the rate of ten miles an hour. with his screw propeller steam launch, in 1837, the watermen that lined the river banks were amazed. Eriesson waited impatiently for the verdict of the Board of Admiralty, who were to give an opinion on his substitution of the oblique principle for the direct action. The Board rejected the propeller on the ground that

its position in the stern would interfere with the steering of the vessel. This verdict induced

Eriesson to come to this country.

During his residence in England Eriesson had been much impressed with the question, which, even at that time, agitated the minds of English scientific men: "What will mankind do for motive power when the supply of coal is exhausted?" Numerous experiments have been made by him with the view of discovering a method whereby solar heat could be utilized, and on his arrival in New York these experiments were continued with increased industry. Now, after nearly forty years of constant application and study, in which time he invented the Monitor, which revolutionized paval warfare, the steam fire engine, and the caloric engine. Eriesson claims to have at last persected his long-sought-for solar engine. erected near the scaboard, where water is to be had, the solar engine will, he claims, generate steam, and that where water procurable atmospheric air may be made the medium for transmitting the solar energy to the motor. Eriesson says that in recent experiments, under a clear sun, the engine worked with perfect uniformity, at a velocity of more than 200 revolutions per minute, and that it

steam furnished by a solar steam generator inten ded for a larger engine.
Capt. Eriesson, during a recent interview. stated that he is ready to build solar engines of any power. A beau tifully finished model occupies a table in the front parlor of his house in Beach street. He intends to offer the principle of the solar engine as a free gilt to the world, and he will apply for a patent only for the purpose of protecting the public. It is a gift for the future, he says, for he does not expect hat his invention can be made available in competition with machinery using combusti-bles. When, however, artificial fuel is not to be had, his solar engine will, he believes, open new possibilities to human achievement.

consumed, at the stated rate, only a part of the

To give some idea of the future possibilities of the solar engine, Ericsson says: "There is a rainless region extending from the northwest coast of Africa to Mongolia, 9,000 miles in

some time cause great changes in favor of those constries which are in possession of continuous sun power. Upper Exppt for instance, with in the course of a few centuries, derive signal advantage and attain a high political position on account of her perpetual sunshine and the consequent command of unitinited metive forces. The time will come when Europe must stop her mills for want of coal. Upper Exppt, then, with her ever-seesing sun power, will invite the European manufarturer to remove his machinery and erect his mills on the firm grounds along the sides of the affivial plain of the Nie, where an amount of motive power may be obtained many times greater than that now employed in all the manufactories of Europe.

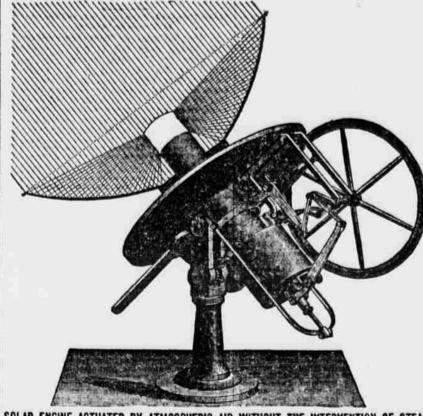
"By means of the solar engine locomotives may be run across arid wastes where neither water nor fuel of any kind is to be had. Not that the solar engine can be elevated upon wheels, for the constantly changing angle the sun makes with the earth would prevent his but locomotives may be fed from reservoirs of air compressed by stationary solar engines placed at regular intervals along the routes."

This much has been given to the public through an interesting article of Capt. Ericsson in Scribner's Monthly, some months since. Further investigations reveal invortant facts connected with the present condition of the engine and with Capt. Ericsson's purposes.

Few subjects connected with physics are so little understood as the propagation of radiant heat. The recognized law that the temperature of the distance from the radiating body. Ericsson says is true only of a sphere of perfectly uniform temperature at the surface, when the distance is reckoned from the centre of the sun atvarious distances is as the density of the sun's radiant heat at different distances, thus defines the law: "The heat of the sun atvarious distances is as the density of the sun's radiant heat at different distances from the centre of the square of the distance from the apex.

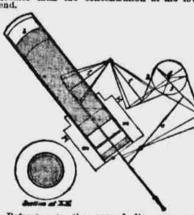
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community of the prevention of the sequence of the second properties of the second properties of the sphere, Sir Loue Newton, returning the sphere, Sir Loue Newton, returning of the sphere, Sir Loue Newton, returning the sphere of the sphere, Sir Loue Sir



SOLAR ENGINE ACTUATED BY ATMOSPHERIC AIR WITHOUT THE INTERVENTION OF STEAM

length of the cylinder than possible with the divergence which would result from employing a reflector of true parabolic curva-ture. The upper end of the cylinder will be subjected to a concentration of heat many times greater than the concentration at the lower end.



of the solar engine, Rriesson anys. There is a rainless region extending from the northwest coast of Africa to Mongolia, 9,000 miles in length, and nearly 1,000 miles wide. Besides the north African deserts, this region includes the southern coast of the Mediterranean east of the Gulf of Cabes, Upper Egypt, the eastern and purrof the western coast of the Red Sea, part of Syria, the eastern part of the countries watered by the Euphrates and Tigris, eastern Arada, the greater part of Persia, the extrems western part of the countries watered by the Euphrates and Tigris, eastern Arada, the greater part of Persia, the extrems western part of China. Thibet, and Iastiy Mongolia. In the western hem isphere, Lower California, the table land of Mexico and Guatemala, and the west coast of South America, for a distance of more than two thousand miles, suffer from continuous and intense radiant heat.

"Computations of the solar energy wasted on the vast areas thus specified would present an inconceivable amount of dynamic force. Estimate the mechanical power that would result from utilizing the solar heat on a strip of land a single mile in width, along the rainless western coast of America, the southern coast of the Mediternmean, both sides of the alinvial plan of the shores of the led Sea, before pointed out. The aggregate length and it width of one miles above the Persian Gulf; and, finally, a strip one mile wide amount of the miles specially and finally, a strip one mile wide amount of the miles and the proposed of the communication, for exceeds 8,000 miles. Along the stated length and in width of one miles and the concentrated solar communication, for exceeds 100 miles and power, it will be seen that the working cylinder, open and the canada of the control of the contr

body (mm) represents a radiator carrying off the heat that is not taken up by the circulating air during the motion of the exchange niston. The amount of heat carried off by the radiator furnishes a nearly correct measure of the solar energy not converted into mechanical work. The form of the solar energy not converted into mechanical work. The form of the solar engine thus described is applicable only for purposes requiring moderate power. In the largest class of solar engines actuated by atmospheric air, in which the radiator is incapable of abstracting the superfluous heat, valves are employed that take in firsh air at each stroke of the machine, as in the caloric engine.

Capt. Ericsson says that the mechanism which he has adopted for concentrating the sun's radiant heat abstracts, on an average, during nine hours a day, for all latitudes between the equator and 45 degrees, fully 3.5 units of heat per minute for each square foot of area presented perpendicularly to the sun's rays. A and of heat being equivalent to 772 foot-pounds, a dynamic energy of 2,702 foot-pounds is, theoretically, transmitted by the radiant heat, per minute for each square foot; hence, 270,200 foot-pounds for an area of 10 feet square. Dividing this sum by the adopted standard, 33,000, the result is reached that 100 square feet of surface exposed to the solar rays develop continuously 8.2 horse power during nine hours a day within the limits of latitude before mentioned. It is well known, however, that the whole dynamic energy of heat cannot be utilized in practice by any engine or mechanical combination, nor even approached; hence Ericsson has assumed, in order not to overrate the capability of the new system, that a solar engine of one-horse power demands the concentration of solar heat from an area of 10 feet

Inding the heat insufficient, he added a polished metallic reflector. The increase of temperature resulting from this expedient rendered his steam generator more effective, and it was found that, under favorable circumstances sufficient steam could be produced to work his small model. The Conseil-Général of Indirect-Loire, having sutsequently provided Mouchas with necessary means, he put up a sleam generator at Tours in 1872, which he deemed a perfect machine, its action being besed on the results of his previous experiments. M. L. Simonin in describing this machine in Recue des Deux Mondes says that on occasions when the sun has been exceptionally clear, the solar generator at Tours has evaporated five litres of water per hour, which he assumes to be equal to a half horse power. This result is produced by the reflector, a truncated cone 8 feet 6 inches in diameter. It was found, however, that in order to double the reflective area necessary to generate steam for an engine of one horse nower, a truncated cone of 11 feet 9 inches aperture would be required. Practical engineers say that an inverted conical body whose base is nearly 12 feet in diameter swinging round an inclined axle at least 60° on each side of the vertical line, will present a structure so formidable, even if counterpoised, that it would not be prudent to increase its size. Accordingly, it would inke one hundred of Mouchot's solar generators to furnish steam for an engine of 100 horse power, which, if placed side by side, would occupy a front space of 2 000 feet from east to west. Although 76 years of age, Capt. Ericsson has the appearance of a strong, healthy man of 50. A visitor at his home will see two long loaves of course brown bread standing on end upon the mantel of his dining room and resting ageinst the wall. "These have stood in this position for forty-eight hours," said his secretary, as he took one from the mantel, "and they are not yet dry enough for the Captain!" This is his favorite food, and he eats large quantities of it during

AN EXTRAORDINARY PEOPLE.

Commander Cameran's Account of the Most Civilized Race in Central Africa.

At the meeting of the British Association At the meeting of the British Association at Sheffleid on Aug. 23, the well-known African exbiorer. Commander Cameron, who was received with applause, anologized for not having his paper prepared, but he did not believe, in detailing the manners and customs of the people of Urua, in Central Africa, this would be a drawback. Urua was one of the largest native States in Africa. It was bounded on the east by Tanganyika, on the north by independent tribes in Manguema, on the west by Ulunda, and on the south by mountains south of the lake of Bangueolo. The great chief was Kasougo, and the race was perhaps the most civilized in Central Africa. The chief claimed Divine honors. On his death all his wives save one were slaughtered at the grave, and the one whose life was not taken was handed over to the chief's successor. The spirit of the deceased prince was supposed to pass into the body of the successor. The centre of the religion of the people was an idol, which was held in great reverence.

The idol was placed in the midst of a dense jungle, and it had for wife one of the sixters of

idel, which was held in great reverence.

The idol was placed in the midst of a dense jungle, and it had for wife one of the sisters of the reigning sovereign. Under the principal chief were smaller chiefs, who collected and paid over to the sovereign tribute. He had seen this tribute come in, and some of it must have come from distant parts of the country. There was a numerous class of wizards in the country who did a large frade in idots and charms. Many of the wizards were ventriloquists, and in this way the idols were made to give answers to the questions put to them. Caste was very clarity defined in the race. No one dare sit down in the presence of the chief with the termission which was very soldom granter sermission which was very soldom granter sermission which was very soldom granter services and the offender.

Authority was maintained by multiation. Hands, feet, ears, noses, were multiated, and the natives did not seem to mind it much. One woman had cut off her own ears. This woman was one of Kasongo's wives; be had about 1,000 of them. She asked permission to multiate herself, and she did at once. The body-cuard of the chief was composed to a great extent of mutilated people, whose affection for the chief seemed in no way decreased; indeed, it would appear that multilation strengthened their regard for their chief. [A laugh.] The name of the idol was Kungwe & Banza, and profound reverence was shown to it. Fire was obtained by friction from a fire block, and in one case a chief used the shin bone of one of the chier eniets who had been conquered. The dress of the leady was very simple, consisting of an apron. Members of the rept family work approximation for the rept family work approximation f

Harted in the Retos of a Falling Stallding.
CHEVENNE, Wr., Sept. 6.—At 10 o'clock list
night the two-story brick building occupied by F. E.
Warren, music store; L. H. Breanners, meat market, and
Mrs. Ellis, binarding buttes, in Baxteenth street, fell in,
a complete wirek. A number of persons were buried in
the rains, but it is believed that all except two children
of Mrs. Bell have been taken out. Col. R. I. T. Vandeande, whose percuts live in Boston, was taken out
dead, and others received more or less minery. The
buristics adjoins the office of the Western Bolon Telegraph Genepany, the wade of which are considered un-

FISHING IN THE LOWER BAY.

ANCIENT WRECKS WHICH ONLY THE OLD WATERMEN CAN FIND. Old Man Sharet's Stormy Cruise is a Small Boat on a Wild October Night when Pray-

ing Might Not Interfere with Batting. Every Saturday evening after working hours and early every Sunday morning crowds of anglers with rods and baskets take the ferryboats for Staten Island. They are nearly all tradesmen, and a great many of them are Germans. They travel in little parties, but, as if there were a sort of freemasonry among fishermen, they all seem to know each other. They are always in high spirits. A noisy, laughing crowd, they chaff each other good humoredly,

and never lose their temper. They discuss the merits of the different kinds of tackle, and tell their exploits at the several fishing grounds. When the boat reaches Clifton, the last landing, each little party falls into line, and all go ashore somewhat like a regiment of soldiers. Then there is a scatter. Some take the train for Prince's Bay: others club together and hire sail boats for the lower fishing grounds—that is to say, West Bank and Romer Shoals.

A party of gentlemen from New York started out a few days ago to visit the different fishing grounds and see the fishermen at work. The wind was from the northwest, and the tide at the ebb. The boat, which proved to be fast, was soon out of the Narrows. The first point of laterest was the upper quarantine or Hoffman Island. Here a number of sailboats and rowboats were at anchor with fishing parties on board, all anxiously watching their lines and floaters, but getting no bites. They were flahing for weak flah, which occasionally come in shoals around this island, and afford excellent sport. A mile further on is the afford excellent sport. A mile further on is the lower quarantine or Dix Island. It is a blenk, deserted looking place. There was not a single bost near it, and for two very good reasons: it is worthless as a flahing place, and is seldom without yellow fever patients. About four years ago, large black fish and sea bass used to be taken at this island in great quantities, but the water has lately become so shallow around it that flahing there is no longer profitable or an using.

ago, large black fish and sea bass used to be taken at this island in great quantities, but the water has lately become so shallow around it that fishing there is no longer profitable or anusing.

About twenty years ago a bark named the Lindsay, in a terrific gale, grounded on the West Bank about three-quarters of a mile south of the spot where Dix Island now stands. She illes there still, or what remains of her, and forme the next fishing ground. Innumerable living attractions for the finny tribe are created in the sea weeds that grow on the old timbers of sunken wrecks, and consequently a wreck is often a godsend to fishermen, carrying out the truth of the old proverb that it is indeed an ill wind that blows nobody good. For years a considerable portion of this vessel remained above water, but now there is not a trace of her on the surface. The fishermen find her just as they find the other wrecks—by landmarks—and the accuracy with which they can always do so is surface, but now there is not a trace of her on the surface. The fishermen find her just as they find the other wrecks—by landmarks—and the accuracy with which they can always do so is surface, but now there is not a trace of her on the surface. The fishermen and the number of anchors, fisher, and the number of anchors, fisher, and the past twenty years would probably go far to stock a junk store. The little yacht in question sailed over to the wreck. There were two fishing parties in small boats anchored over it. They complained of poor goort, sudd that the place was no longer good for anything, and that owing to the contribution of the garbage sows, they could now hook nothing but old rags, hats, shoes, hoop skirts, and occasionally an Alderman's bed.

The next halting place was at the Dumb Beacon, or the "Monument," as it is familiarly called. It is about three miles from Sandy Hook, and was put there to mark should after. There is no light on it, and at night it is probably more dangerous than useful. It is propoed upon all sides with immense rock

he could get away. This act incensed the old main very much, but the parties who caught him have ever since kept the position of the sunken vessel a secret. There are five or six wreeks on the Romer, the most interesting being that of the steamer Mary E. Bourdman, She went aground on these shouls about twenty years ago in midwinter, during a gale, and her crew and passengers were taken off by the old pilot boat No. 8, which has recently been wrecked on the rocks near Newport. All that is left of the Mary E. Boardman is a portion of her bottom, some of her machinery and her

blook make be districtly seen in fast a many maker the formation of the warge, is a function under the control of the seen of the control of

the short, sharp breakers that they had just passed through. A man with a small boat in very rough waber is in pretty much the same position as a soldier in line of battle. Just as the latter may escape for hours the passing bullets before he is shot down, the former may pitch and toss for a long time before the comb of a breaker falls directly upon him. Bharot and his companion had luck. It seemed to them as if their little boat was actually dolgring the more dangerous waves, for a look in nothing but the spray, which was quickly bailed out. At last they could see the Jersey coast, but it was necessary to cross the sease at an angle to approach it, and that would be certain death. On they drove still further, when suddenly they distinctly saw the light of a vessel before them. It was a schooner at anchor, boilding her own, with the apray washing over her from stem to stern, Sharot's companion commenced to shout for heip.

"Save your wind, said the old man, 'you'll need it all when we get near enough for them to hear us. I'll tell you when to shout." "They came close to the schomer's bow. Now sound your buglel' cried Sharot. Bound it all you know how!"

"The shout for help was given, and it was heard. Quickly, several sailors were on deek. To heave a line to the fishermen was the work of an instant. The latter seized it, and a moment or two afterward they were drinking hot coffee in the cabin of that schooner, while the little punt drifted away. Three days afterward the two fishermen returned to Staten Island, where a report had been circulated that their bodies were washed ashore at Sandy Hook; when they came to land they were looked upon as ghosts."

the machine without notifying the company. As she was benind in her payments, they hired a private detective, who makes a specialty of such cases, to hunt her up. The man traced her to 158 Orchard street, where he said he found she had been dispossessed, and that the sewing machine was on the sidewalk. He then took it saws.

"It seems to me very hard, if not crue!," remarked Justice Duffy, "that business men, either furniture dealers or sewing machine merchants, take advantage of their contracts to take forcible possession of what these poor people have purchased, at to them such hardships. This woman has already paid, by your own admission and receipts, the sum of \$38. Now, you want to deprive her not only of the machine, but of the money she has paid. This is not lawful, and you had no right what ever to seize her machine in the way you did." Justice Duffy then, ou a mutual understanding between Mr. Roberts and Brs. Werzberg permitted the latter to go, on his promising that the sewing machine should be returned to Mrs. Werzberg on her paying by small installments what she could afford.

DR. KINHORN'S SUCCESSOR.

Rabbi Dr. K. Kohler Prenches his First Ser

The ornate synagogue Beth-El, at Lexington avenue and Sixty-third street, was thronged yesterday morning on the occasion of the first sermon by the new rabbi, Dr. K. Kohler, who succeeds his honored father-in-law, Dr. David Einhorn. Dr. Kohler acquired a reputation as a pulpit orator and pastor of the Sinai congregation in Chicago, where he distinguished him-self by advocating the plan of Sunday Jewish services, so long favored by Dr. Einhorn. Although only 36 years old, he has the bearing and force of a veteran elergyman. His voice is full and strong, his gesture animated, and his manner vigorous. His new congregation signalized his first sermon by a large attendance. Special musical services called forth the powers of the strong choir. The pulpit was occupied by Dr. Hirsch, Dr. Einhorn, Mr. Sternberg, the reader, and the President and Vice-President of the congregation, Mesers. Kuntzman and Berliner. The day being the 150th anniversary of the

birth of Moses Mendelssohn, the great regen-

erator of Judaism, Br. Kohler took as his theme,

a Jew!" Religious instruction ought not to close with confirmation at the very age when the mind awakes to self-consciousness, but hold must be taken of the young until they have reached the age when they may be enlisted in the ranks of the Jewish congregation. And Sanday, the only day of rest given to the young must be chiefly devoted to this purpose. Not from inclination toward Christianity, which, in fact, has in Reform Judoism its stanchest and most uncompromising adversary, but from fervent love for Judaism. I advocate the introduction of periodical Sanday betures. The proceeding stream to the roung will, while putting the shallow wisdom of popular privace-dogy into shade, at last win them all back to us. They will learn that Judaism, issuing forth from the grand fountain of the past, smattes its waters only in the vest ocean of united numanity at the end of all time. These are the yiews and aims of Reform Judaism, which the speaker hoped to be able to defend and work for in honor of God and of Israel.

Dr. Kodier will deliver an English sermon bext Saturday on Judaism and the Jewish pulpit.

An Ballan, experienced in silk culture says the clumate
of south Jersey is as well adapted for the proportion of the brother of the proportion of the propor

YOUNG ANDERSON'S CRIMES

RILLING HIS MOTHER, AUNT, AND COU. SIN, AND FIN CLLY HIMSELF.

His Victime Lying in the Honse Till They are Past Recognition-A Bullet Hole in His Temple - An Uncaught Accomplice.

CINCINNATI, Sept. 5. In a cottage in the circinnari, sept. 3. In a certaign in the village of Waynesville, thirty-seven miles from this city. Mrs. Mary Hatte kept house for William E. Anderson, her 18 year-old son by a former husband, Daniel R. Anderson, from whom she was divorced in 1835. Her maiden name was Cregg, and she and Anderson were married some nineteen years ago, when she was test 16 years old. After her divergeshe married Hans, who died. Daniel R. Anderson served in the evil war as a member of the Harris Guaris, Thirteenth Ohio Infantry. The decree of di-vorce was granted because of his failure to provide for his wife, and the custody of the child was given to him. He has of late been in the employ of the Southern Railroad, making his home at a hotel in this city. It is soul that thera had been some correspondence looking toward a remarriage with his divorced wife. William E. Anderson worked in the office of the Waynes-

indisposant difference and present and the street of the single way of difference and the street of the street of

James Simonton of Paterson N. J., went fishing in the Hackensack on Westnesday. He had a bite, and because so excited that he fell overheard, while he felt towed his rod and line a way. A first said he had a bite, and because so excited that he fell overheard, while he feel towed his rod and line a way. A first said he went to his wanter of the wanter problem of the history in the history of the history in the history of t